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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/694,171	10/23/2000	Motoyasu Utsunomiya	13982	9734

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EXAMINER

DAVIS, DAVID DONALD

ART UNIT	PAPER NUMBER
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2652

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DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/694,171

Applicant(s)

UTSUNOMIYA, MOTOYASU

Examiner

David D. Davis

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,4 and 7-28 is/are allowed.
- 6) ☒ Claim(s) 5,6 and 29-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 14 is objected to because of the following informalities: In line 46 of claim 14, "ata" should be --at a--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 5,6 and 29-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Budde et al (US 6,233,124). A two-stage actuator type magnetic head positioning mechanism is shown in figure 4 including a plurality of fine actuator sections that minutely drives, by a pair of piezo-electric elements 32a and 32b mounted in said fine actuator sections. Also shown in figure 4 is a magnetic head supporting section adapted to support slider 20 on which a magnetic head is attached. Additionally shown in figure 4 a plurality of holder arms to support each of the fine actuator sections.

Figure 1 shows arm block 16 formed by integrally unifying the plurality of holder arms; and voice coil motor 12 to drive arm block 16, whereby the fine actuator section is composed of an actuator spring made from one thin steel plate 34 and a base plate 36 made from one thick steel plate, both of which overlap each other.

Figure 4 continues to show driving spring section 44a and 44b connected to the magnetic head supporting section mounted on the actuator spring. Figure 4 further shows a pair of driving voids 66 to absorb vibration of the magnetic head supporting section and extension/shrinkage of piezoelectric elements 32a and 32b along a longitudinal axis. Voids 66 are formed in a state being symmetrical right and left and parallel with respect to a longitudinal center axis of the actuator spring. End portions of the pair of piezoelectric elements 32a and 32b are connected to the magnetic head supporting section and to the actuator spring in a manner that the end portions straddle each of driving voids 66. Base plate 36 junctions one face of the actuator spring in a manner that base plate 36 covers voids 66.

Base plate 36 is opened at a place where base plate 36 and magnetic head supporting section overlap each other and is junctioned to the actuator spring in a manner that base plate 36 surrounds external edges of driving spring section of the actuator spring.

Driving spring section of the actuator spring is composed of a short plate spring and of a pair of side springs 44a and 44b made from long plate springs and center spring 62 is disposed on the center axis of the actuator spring while each of side springs 44a and 44b is disposed with center spring 62 interposed between side springs 44a and 44b, in a direction intersected almost at right angles to the center axis of the actuator spring. Base plate 36 is junctioned to the actuator spring, at least, at a root area of center spring 62 and side springs 44a and 44b.

Each of the pair of piezoelectric elements 32a and 32b is connected to magnetic head supporting section and to the actuator spring in a manner that each of the piezoelectric elements 32a and 32b straddles each of driving voids 66 along both sides of the mounting position of the magnetic head supporting section and the driving spring section.

The driving spring section of the actuator spring is composed of center spring 62 made from one short plate spring and a pair of side springs 44a and 44b made from long plate springs. Center spring 62 is connected to the magnetic head supporting section and to the actuator spring on the center axis of the actuator spring at an end portion of the magnetic head supporting section nearer to the holder arm while each of side springs 44a and 44b is connected to magnetic head supporting section and to the actuator spring in a manner that each of side springs 44a and 44b straddles each of driving voids 66. Also as shown in figure 4 each of side springs 44a and 44b intersects almost at right angles to each of piezoelectric elements 32a and 32b.

Figure 4 of Budde et al show a boss section is formed on base plate 36 so that base plate 36 is connected to the holder arm.

Allowable Subject Matter

4. Claims 3, 4 and 7-28 are allowed.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Mon., Tues., Thurs. and Fri. between 7:30-6:00. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900. Any other

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inquiry should be directed to the customer service center whose telephone number is (703) 306-0377.



David D. Davis
Primary Examiner
Art Unit 2652

ddd
December 1, 2003